

PROPOSALS FOR REGULATIONS UNDER THE BUILDING (EARTHQUAKE-PRONE BUILDINGS) AMENDMENT ACT 2016

From



TO

**MINISTRY OF BUSINESS, INNOVATION
& EMPLOYMENT**

15 December 2016

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ICNZ Supplementary Submission on Proposals for Regulations under the Building (Earthquake-prone Buildings) Amendment Act 2016

Thank you for the opportunity to submit on the Proposals for Regulations under the Building (Earthquake-prone Buildings) Amendment Act 2016. The Insurance Council (ICNZ) made a submission to the Earthquake Prone Buildings Bill in 2014 where we highlighted the need for inclusion of Non-Structural Elements in buildings to be recognised as being potentially earthquake prone and a life safety issue. We now submit on how Non-Structural Elements in buildings should be captured in the regulations.

About us and our interests in the Regulations under the Building (Earthquake-prone Buildings) Amendment Act 2016

1. The Insurance Council (ICNZ) represents the interests of the fire and general insurance industry in New Zealand. Our 28 members insure over \$600 billion worth of New Zealand assets and liabilities. ICNZ has for some time been raising awareness on the need for a coordinated approach from the top of local government down to individuals for better management of natural hazards so to keep the transfer of risk to insurance affordable and available for all New Zealanders long into the future.
2. The ICNZ members pay property damage claims that allow New Zealanders to recover from a Natural Disaster. As at the end of October 2016 Insurance Council members had paid over \$19 billion in property claims for the rebuild of Canterbury. It is likely that insurers will be paying significant claims amounts for the recent Kaikoura earthquake event for commercial buildings in Wellington.
3. The Kaikoura earthquake 14 November caused damage to many commercial buildings in Wellington. As was the case in the Seddon Earthquake event of July 2013, internal services and fit-out failed, only this time the damage is much more extensive and has affected a larger number of buildings and businesses. This highlights that New Zealand buildings have systemic problems with Non-Structural Elements not being effective and compliant with standards like NZS4219 &

NZS1170.5. The seismic failure of Non-Structural Elements is a life safety issue and needs to be captured by the regulations for the Earthquake-prone Buildings Amendment Act 2016.

4. New Zealand's business and economic resilience must be treated as a high priority.
In Wellington, we are witnessing the disruption of businesses due to buildings that have suffered failure of the internal fit out and services. There is a concern that several of these businesses that have been displaced twice in just over 3 years due to the failure of their buildings internal fit out and services, may decide to move out of Wellington. Other business may follow, resulting in loss of jobs and losses to the local Wellington economy.
5. Several newer buildings in Wellington that were constructed in the last 15 years have suffered structural failure. In one such case that ICNZ is aware of, a section of floor collapsed onto an office space below. Had the earthquake event occurred during the working day it would have been highly likely that a fatality or severe injury could have resulted. The buildings that had suffered structural failure were constructed on soft ground. The engineering required for sustainable construction on soft ground is achievable. The Te Papa building is a good example. ICNZ recommends that all new building designs should be peer reviewed by a panel of engineers to ensure that the design will not fail in a moderate earthquake event. This would mitigate concern that the interests of the building owner in most cost-effective construction is balanced against buildings integrity needs.
6. New Zealand has enjoyed relatively high levels of earthquake insurance for relatively low cost compared to other OECD countries that have similar level of seismic risk. The recently repeated experience of vulnerability of Wellington's buildings in a moderate earthquake event is not likely to provide the insurers and their reinsurers internationally with much in the way of confidence. New Zealand is likely to see increases in the cost for earthquake insurance for commercial property going forward. It's very important that our commercial building design and construction standards are robust to preserve our earthquake insurance purchasing position and protect investment in the economy. Without affordable insurance, Wellington may become too expensive to do business in and without insurance the banks will not lend.
7. In section 3.1 of the discussion document outlines the need for finding the appropriate balance between protecting people from harm, the cost of strengthening or removing earthquake prone-buildings, and the impact on heritage. Figure 1. In the discussion document illustrates six considerations. One very important consideration is missing and that is "Business Resilience". If business resilience was factored into decision making, then we would see improved risk management decisions being made by those that use and manage our buildings.
8. This submission will now focus on the proposed regulations set out in the Earthquake-prone Buildings Amendment Act 2016 and will respond to the following questions as set out in the Ministry of Business, Innovation & Employment September 2016 Discussion Document.

Objectives for all regulations

1. Do you agree with the objectives for making regulations?

Yes. The regulations allow more granular delivery of outcomes sought in legislation.

2. Are there any other objectives that should be considered?

Regulations can be updated with more flexibility allowing legislation to respond to changing needs.

Ultimate capacity

3. Do you agree that defining 'ultimate capacity' will help to achieve the objectives for all regulations? What are the reasons for your views?

Yes, but with a proviso. 'Ultimate Capacity' is defined in the regulations as:
"Ultimate capacity means the building's probable capacity to withstand earthquake actions and maintain gravity load support calculated by reference to the building as a whole and its individual elements or parts." The words ***"individual elements or parts"*** must include reference to internal and external non-structural elements such as services, ceilings as well as external cladding and facades. The words ***"individual elements or parts"*** needs to be defined to ensure that internal and external non-structural elements such as services, ceilings as well as external cladding and facades are included.

4. Do you agree with the suggested definition? Please give reasons for your views.

Yes, but subject to *"individual elements or parts"* needs to be defined so that it captures the concerns ICNZ have with non-performing seismic resilience of internal fit out and services.

5. Are there any other technical criteria that should be included in the definition of 'ultimate capacity'? If so, what are these and why do you think they are relevant?

No.

6. If you did not agree with the suggested definition, what definition do you think should be used? Please give reasons for your views.

N/A.

7. Do you have any other comments on the proposals about the definition of ultimate capacity?

No.

Categories of earthquake ratings

8. Do you agree that establishing categories of earthquake ratings will help to achieve the objectives for all regulations?

Yes

What are the reasons for your views?

The proposed categories of earthquake ratings should be much clearer to the building users and owners about the seismic performance of the building in comparison to the current rating system notifications. The proposed categories of earthquake ratings are more closely aligned to the current Red Book engineering guidelines. Rating buildings will send market signals to building owners to make properties more resilient to attract tenants.

9. Do you agree that regulations are required to prescribe categories of earthquake ratings or do you think some other mechanism should be considered?

We agree that the regulations must be effective in making it clear to building users and owners of the seismic performance of a building. To ICNZ the proposed approach appears sound.

What are the reasons for your views?

10. Do you agree with the proposal to create two bands of earthquake ratings for buildings?

Yes.

What are the reasons for your views?

The rating system needs to be simple so it can be easily understood. Creating just two bands clearly highlights the two categories of building that would fall below the less than 33% NBS and the less than 20% NBS thresholds.

11. Do you agree with the proposal to delineate the categories of ratings as 'less than 20%NBS' and '20-33%NBS'?

Yes.

12. What are the reasons for your views?

This allows all those concerned to differentiate that a building is not just less than 33% NBS but is less than 20% NBS. It would mean that the building with a 20% NBS rating would likely be a far higher priority than a building that is rated at just less than 33% NBS.

13. Are there any other risk parameters that could be taken into consideration in establishing the earthquake ratings categories?

No.

14. Do you have any other comments on the proposals about categories of earthquake-ratings?

**We note the NBS is a life-safety measure only.
We stress the need for business and economic continuity post disaster, so we believe wider considerations, such as, non-structural, seismic resilient compliance with the guidelines be included.**

Notices

15. Do you agree that issuing different forms of EPB notices will help to achieve the objectives for all regulations?

Yes

What are the reasons for your views?

It's important that the notices cannot be confused with other general Council notices or notices used in Civil Defence post-disaster inspections.

16. Do you agree with the proposal to issue three forms of notice? Do you think this number and type is sufficient?

Yes.

What are the reasons for your views?

We agree that the three proposed notices adequately covers the reasons why the notice is given including wear an NBS rating have not yet been provided.

17. If you did not agree that there should be three forms of notice, how many and what type of forms do you suggest we should use?

N/A.

18. Is the information layout clear and easy to read?

Yes.

19. If not, what would you suggest to improve the forms?

N/A.

Substantial alterations

20. Do you agree that establishing criteria for substantial alterations will help to achieve the objectives for all regulations?

Yes to some extent but not entirely. The building could have earthquake prone internal and external non-structural elements such as services, ceilings, external cladding and facades that may not be discovered as they are hidden from normal view. The proposed regulations criteria for substantial alterations will not trigger the need to remedy these earthquake prone internal and external non-structural elements.

What are the reasons for your views?

Remedying these internal and external non-structural elements may not be considered as a substantial alteration and the remedial work required to remove damagers may not be done.

Any time a part of a building is subject to an alternation such as an office refit then the work that is preformed needs to remove any preexisting risk from seismic failure, and the work needs to be compliant with current standards.

21. Do you agree that the criteria for substantial alterations should be set out in regulations?

Yes, but must include the requirement that any discovered earthquake prone internal and external non-structural elements such as services, ceilings, external cladding and facades be remedied and not wait for a substantial alteration.

22. If not, what other mechanism could be used to define the criteria for substantial alterations and why?

N/A.

23. Do you agree with the concept that there should be a single measure only, common to all earthquake-prone buildings across the country, for identifying what building work will be deemed to be 'substantial alterations'?

No. We recommend that it needs to be a combination of the value of the consented building work as well as the nature of the consented building work.

Please give reasons for your views.

Some alternations that could be consented for less than 25% of the ratable value of the building may be of a nature that could reduce the seismic resilience on the existing structure.

24. If so, do you agree with the proposal that this be 25% of the ratable value of the building (excluding land)? Please give reasons for your views.

N/A.

25. If you agree with using a single measure to identify substantial alterations, but do not support using the building value as a denominator, then please state what you think the measure and the value should be (eg a fixed financial threshold of (say) \$200,000 for the total value of building work, or some other measure or value).

N/A.

26. If you disagree with the proposal, and think that there should be more than one measure to identify substantial alterations, what should these be and why?

Should include as a minimum a combination of “25% of the ratable value of the building” and the “nature of the substantial alteration”. The substantial alteration could be a structural addition that could have a negative effect on the seismic performance of the existing structure.

27. Should we choose a different approach to setting the threshold for substantial alterations between areas with higher value buildings and areas with lower value buildings (as may occur between some urban and rural areas).

Yes, that would be important.

If so, what should the approach be?

We would recommend that any proposed alterations should first require a report on the safety and resilience of the internal and external non-structural elements such as services, ceilings, external cladding and facades. Any report needs to reference compliance with standards NZS4219 & NZS1170.5.

28. What are the implications of defining ‘substantial alterations’ (eg through a percentage of ratable value, and/or a fixed financial value for proposed building work) for mixed use buildings and buildings with multiple titles (eg multi-story unit title apartments, shopping malls)?

There are likely to be financial implications for building & apartment owners from any method used to define a substantial alteration. We believe that there is a lot to be gained for personal safety and business resilience, if for any alteration of the building a report on the safety and resilience of the internal and external non-structural elements such as services, ceilings, external cladding and facades be obtained. Any deficiencies in internal and external non-structural elements would need to be rectified as part of the alternation work.

29. What are the implications of defining ‘substantial alterations’ (eg through either a percentage of ratable value, and/or a fixed financial value for proposed building work), for owners of heritage buildings?

There are likely to be financial implications for heritage building owners from any method used to define a substantial alteration. We believe that there is a lot to be

gained for personal safety and business resilience if for any alternation of the building that a report on the safety and resilience of the internal and external non-structural elements such as services, ceilings, external cladding and facades be obtained. Any deficiencies in internal and external non-structural elements would need to be rectified as part of the alteration work .

30. Are there any situations where it would not be appropriate to impose the 'substantial alterations' criteria on proposed building work? Please explain what situation/s and give reasons for your views.

Many buildings may have internal and external non-structural elements that will not be compliant with standards such as NZS4219 & NZS 1170.5. We feel that the regulations need to require that even for minor consented alternations, a report be required outlining the safety & resilience of internal and external non-structural elements. Any deficiencies will need to be rectified as part of the consented alternation.

31. Do you have any other comments on the proposals about the criteria for substantial alterations?

It's important that the regulations pick up the problem of noncompliant & vulnerable internal and external non-structural elements that in a moderate earthquake event are likely to fail, presenting a life safety hazard and a business continuity loss risk. Experience in Wellington has shown that internal and external non-structural elements are more likely to fail than the building structure in a moderate earthquake event. Our proposal takes presents the opportunity for the proposed regulations to finally address the systemic problem we have in non-compliant internal and external non-structural elements that are failing in moderate earthquake events.

Exemptions

32. Do you agree that establishing prescribed characteristics for exemptions will help to achieve the objectives for all regulations?

Yes.

What are the reasons for your views?

The regulations need to be fair and balanced. Not all communities in New Zealand can afford to have all earthquake prone buildings strengthened or demolished, so some exemptions need to apply.

33. Do you agree that the prescribed characteristics for exemptions should be set out in regulations?

Yes.

If not, what other options could be considered and why?

N/A.

34. Do you agree that territorial authorities should have some discretion to make decisions about exemptions using parameters for building occupancy and use as a guide?

Yes.

35. Do you think the proposed occupancy thresholds are appropriate to represent life safety risk? (These are: low - 0-50 people, medium - 51-300, high - more than 300.) What are the reasons for your views?

Difficult for ICNZ to Comment.

If you disagree, what do you think the thresholds should be?

36. Do you think the proposed 'frequency of occupancy' thresholds are appropriate to represent life safety risk? (These are: low - <25 times per year, occasional -25-100 times per year, frequent - more than 100 times per year.) What are the reasons for your views? If you disagree, what do you think the thresholds should be?

Difficult for ICNZ to Comment.

37. Do you think that the exemptions provisions should apply to priority buildings?

No.

What are the reasons for your views?

Priority buildings are too important to be left earthquake prone. Priority buildings may be needed by the community in the event of an emergency or are used frequently.

38. Do you think that the seismic hazard area of the building should be a consideration for exemptions?

Yes. With higher seismic hazard areas there should be fewer exemptions.

39. Should the occupancy thresholds be lower if the main occupants of a building are young children or people who would require mobility assistance to leave?

Difficult for ICNZ to Comment

40. What other factors should a territorial authority consider when considering an application for an exemption under section 133AN?

It will be very important that territorial authorities consider the likely consequences of an earthquake prone building being given an exemption and then failing next to or near other buildings creating a cordon that will impact the economic activities of other business and communities.

A dangerous building can create a safety cordon that can be blocks wide and cause widespread business losses.

41. Do you have any other comments on the proposals about exemptions?

No.

General

42. Do you have any other comment to make on the proposals (for example, matters related to implementation and monitoring)?

No.

Proposals for a Methodology to Identify Earthquake-prone Buildings

This section of the discussion document appears to be more technical and better understood by engineers, building practitioners, building owners and Territorial Authorities.

The Insurance Council will only answer questions where it has knowledge or has a recommendation to make.

Identification of potentially earthquake-prone buildings via profile categories

1. Do you agree with the proposal to specify types of buildings that are potentially earthquake prone based on readily identifiable characteristics? If not, how should potentially earthquake-prone buildings be identified in the methodology?

Yes.

2. Do you agree with the use of building age or era of construction, construction type, and number of storeys or height being the parameters used? If not, what parameters should be used?

Yes.

3. What, if any, profile categories of buildings should be included that are not?

We outlined in our introduction to the Proposals for Regulations on page 3, point 5 that a structural failure occurred in a Wellington building as a result of the Kaikoura earthquake event 14 November. It's possible that the particular design of that building that had the structural failure combined with being built of soft soils could indicate that this newer building design was earthquake prone. We would recommend that consideration be given to requiring an engineering review of such similarly designed buildings that are built of soft soils.

4. What, if any, profile categories of buildings shouldn't be included that are?

N/A.

5. Are the profile categories adequately defined to allow TAs to identify potentially earthquake-prone buildings? If not, what other information is needed?

We think in general consideration needs to be given to our recommendation in question 3 above.

6. Is the information required by a TA to identify a building as potentially earthquake prone adequate?

N/A.

7. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

N/A.

8. Do you have any other comments on these proposals?

No.

Identification of potentially earthquake-prone buildings at any time

9. Do you agree with the TA's powers to identify a potentially earthquake-prone building at any time, being applied by drawing upon either existing knowledge or information received, or through activities such as the building consent process? If not, why not?

Yes.

10. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

No.

11. Do you have any other comments on these proposals?

No.

Description of parts of buildings

12. Do you agree with how parts of buildings are described? If not, how do you think parts of buildings should be described?

Yes, this appears sensible.

13. Do you think further examples are needed of parts that may have the potential to create a significant life safety hazard?

Yes. Buildings with hollow core flooring elements should be included as they have been known to have issues in seismic events.

Internal and external non-structural elements such as services, ceilings and the seismic restraint of the buildings plant must be included in the assessment criteria.

14. Do you think examples should be provided of parts that would be unlikely to have the potential to create a significant life safety hazard?

N/A.

15. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

No.

16. Do you have any other comments on these proposals?

No.

Type of engineering assessment required

17. Do you agree with incorporating the Engineering Assessment Guidelines by reference for the types of assessment required?

ICNZ are not qualified in this field of earthquake and structural engineering however to us the proposals appear to be sensible. By incorporating the Engineering Assessment Guidelines by reference in the rules will provide for a more consistent approach to earthquake prone building assessment and in a set time frame.

18. Are there other assessment methods that you think should be recognized? If so, what are they?

Not to our knowledge.

19. Do you have any comments on how this proposal will work in practice and its impact?

No.

What are the pros and/or cons?

N/A

20. Do you have any other comments on these proposals?

No.

Criteria for accepting engineering assessments

21. Are the acceptance criteria adequate?

Yes. ICNZ are not qualified in this field of earthquake and structural engineering however to us the proposals appear to be sensible.

22. What, if any, acceptance criteria, should be included that aren't?

N/A.

23. What, if any, acceptance criteria, shouldn't be included that are?

None to our knowledge.

24. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

No.

25. Do you have any other comments on these proposals?

No.

Determining if a building is earthquake prone

26. Do you agree with the description of how the section 133AB(1)(a) test will be applied? If not, why not?

27.

Yes.

28. Do you agree with the description of how the section 133AB(1)(b) test will be applied? If not, why not?

Yes.

29. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

No.

30. Do you have any other comments on these proposals?

No.

Assigning earthquake ratings

31. Do you agree with basing the rating on the %NBS outcome specified by the engineer in the engineering assessment report for those buildings confirmed as earthquake prone? If not, what method should be used?

Yes.

32. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

No.

33. Do you have any other comments on this proposal?

No.

Criteria for recognizing previous assessments

34. Do you agree with the criteria specified for the recognition of previous assessments? If not, why not?

Yes.

35. What, if any, criteria, should be included that aren't?

Nothing ICNZ can identify.

36. What, if any, criteria, shouldn't be included that are?

Nothing ICNZ can identify.

37. Do you have any comments on how this proposal will work in practice and its impact? What are the pros and/or cons?

No.

38. Do you have any other comments on these proposals?

No.

Summary

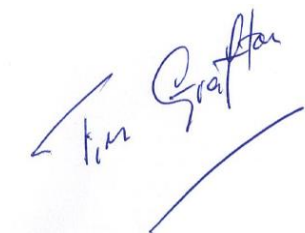
The Kaikoura earthquake 14 November that caused damage to many commercial buildings in central New Zealand is a reminder that we have a systemic problem with Non-Structural Elements not being effective and compliant with standards like NZS4219 & NZS1170.5. The seismic failure of Non-Structural Elements is a life safety issue and needs to be captured by these regulations.

There is a risk that insurers may see cities like Wellington as being a much higher risk proposition and this could affect the availability for future affordable earthquake insurance.

New Zealand's business and economic resilience must be treated as a high priority.

The Insurance Council generally supports the proposed regulations for the new earthquake prone buildings legislation but strongly recommends that the regulations need to include requirements for identifying and remediating risks associated with the seismic failure of Non-Structural Elements in both older and newer buildings.

Should you have any questions about this submission then please contact John Lucas on (04) 495 8006 or John@icnz.org.nz

A handwritten signature in blue ink that reads "Tim Grafton". The signature is written in a cursive style with a long horizontal stroke underneath.

Tim Grafton
Chief Executive

A handwritten signature in black ink that reads "John Lucas". The signature is written in a cursive style with several vertical strokes.

John Lucas
Insurance Manager